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TO: Commissioners and Alternates

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SUBJECT: Commission Briefing on the LTMS Program
(For Commission Consideration on July 18, 2013)

Summary

The nationally-recognized Long Term Management Strategy of the Placement of Dredged Material in the Bay Region (LTMS) was developed in 1990 in an effort to reduce in-Bay disposal of sediment as a waste product and beneficially reuse sediment around the Bay. Throughout development of the program and its successful implementation over the last twelve years, BCDC has partnered with the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE) and the San Francisco Bay Regional Water Quality Control Board (Water Board), resulting in the beneficial reuse of approximately 21 million cubic yards of sediment, primarily in habitat restoration projects throughout the Bay Area. This briefing will illuminate the program history, its transition period to its present phase, challenges and opportunities and potential paths forward. The Commission will hear from the LTMS Management Committee members and the executive staff of the partnering agencies, with time available for discussion.

Background

History & Inception. The McAteer Petris Act recognizes dredging as "essential to establish and maintain navigational channels for maritime commerce, which contributes substantially to the local, regional and state economies, as well as for military navigation, flood control, recreational boating and other public purposes." (Section 66663 – 66663.1) Along with dredging comes disposal of dredged sediment, which historically took place in many locations around the Bay, often in areas immediately adjacent to the dredging activity. The McAteer Petris Act governs disposal of dredged sediment in the Bay as "fill in the Bay" and therefore directs staff to consider alternate upland locations and to minimize in-Bay placement through implementation of the Commission's San Francisco Bay Plan (Bay Plan) dredging policies. Dredging, the process of removing sediment from below tidal waters in channels, berths, marinas and other areas has occurred in the Bay and the Delta since the early days of European settlement to ensure navigational safety for the transportation of goods and people and, more

recently, for recreational boating purposes. Dredged sediment is currently disposed of in several ways: it can be placed at one of four in-Bay dispersive disposal sites; it can be recycled at beneficial-reuse sites, such as wetland restoration projects; it can be disposed of outside the Bay at the San Francisco deep ocean disposal site (SFDODS); and it can be taken to a landfill.

San Francisco Bay is home to five ports (Benicia, Richmond, Oakland, San Francisco, and Redwood City), five refineries (Valero, Phillips 66 Rodeo and Richmond, Shell, and Tesoro), over a hundred marinas as well as individual docks at parks and private homes. Combined maintenance of these facilities requires an average of 1.5 to 3 million cubic yards (mcy) of primarily clean sediment to be dredged annually. The USACE alone maintains 17 federal channels, both deep and shallow draft. The deep draft channels are dredged annually and the shallow draft channels less frequently. Occasionally, channels or berths are deepened, such as at the Port of Oakland Fifty-foot Deepening Project, creating larger volumes of sediment than normal maintenance dredging activity would generate.

Today, dredging and dredged sediment disposal occurs relatively routinely with little fanfare or difficulty for most projects. Permit applications are filed, sediment testing occurs, sediment quality determinations are made, permits are issued, placement sites are identified and dredging episodes are reviewed and approved. However, this was not always the case. In the mid to late 1980's, dredging was controversial due to the concern over contaminated sediments, navigational hazards created by mounding of dredged sediment at the Alcatraz disposal site, and impacts of in-Bay disposal on water quality and fisheries resources. In addition, the permitting process was slow. In some unfortunate cases, permits from one regulatory agency would expire prior to another agency's ability to take action. The situation became so bad that the fishing and environmental community organized a protest that prevented disposal of any dredged sediments at Alcatraz. This difficult period of time was referred to as "mudlock."

In response to the situation, the five agencies with regulatory authority over dredging and disposal of dredged sediment began a large and comprehensive stakeholder process to address issues regarding the mounding at the Alcatraz disposal site and potential impacts from dredging and dredged sediment disposal on water quality, wildlife, and uses of the San Francisco Bay. The regulatory and resource agencies and stakeholders, including maritime, local municipalities, the environmental community and the commercial and recreational fishing community came together to develop the LTMS program. After ten years, multiple studies and many meetings, the LTMS agencies issued the programmatic Environmental Impact Statement/ Environmental Impact Report (EIS/EIR) in 1998. The EIS/EIR evaluated alternative long-term dredged sediment management strategies for dredged sediment placement in the Bay, the ocean and at beneficial reuse sites. The environmentally preferred alternative selected for implementation was designed to maximize beneficial reuse and minimize in-Bay disposal, with placement at the new SFDODS as a "safety valve" so that in-Bay disposal could steadily be reduced even while additional reuse site capacity was being developed. This alternative also included a twelve-year transition period in which in-Bay disposal would be incrementally reduced in favor of placement at beneficial reuse sites to allow for planning, budgeting and site development such as the Hamilton Wetlands Restoration Project (HWRP). In 2001, the LTMS agencies adopted the innovative LTMS Management Plan and began its implementation. The Water Board and BCDC amended their San Francisco Bay Basin and Bay Plans, respectively to include the major tenants of the LTMS Program, and the USACE and EPA amended their regional policies.

The goals adopted in the LTMS program include:

- Maintain, in an economically and environmentally sound manner, those channels necessary for navigation in San Francisco Bay and Estuary and eliminate unnecessary dredging activities in the Bay and Estuary;
- Conduct dredged material disposal in the most environmentally sound manner;

- Maximize the use of dredged material as a resource; and
- Establish a cooperative permitting framework for dredging and dredged material disposal applications.

The key component of the LTMS program is reducing in-Bay disposal from a historic high of 6.6 mcy to 1.25 mcy annually through a twelve-year transition period, in favor of beneficially reusing the sediment at restoration sites, for levee maintenance and in construction projects. This was an early recognition that dredged sediment is valuable resource rather than a waste product.

In addition to increasing beneficial reuse of dredged sediment and reducing in-Bay disposal, the LTMS program has incorporated a number of measures that, as whole, provide improved habitat and species protection, reduction of water quality impacts and better permit coordination. These components include: (1) programmatic biological opinions from NOAA Fisheries Service and the US Fish and Wildlife Service (USFWS), and concurrence from the California Department of Fish and Wildlife (CDFW) that incorporate dredging work windows for listed species protection; (2) programmatic Essential Fish Habitat protection measures; (3) standardized and consistent sediment testing requirements and determinations through the Dredged Material Management Office (DMMO); (4) integrated alternative disposal site analysis for projects with multiple facilities or multiple episodes; (5) a small dredger programmatic alternatives analysis; (6) management of the in-Bay disposal sites; and (7) public forums, including LTMS Management Committee meetings, subject matter symposiums, DMMO meetings, and project coordination meetings that provide direct dialogue opportunities. Projects that are consistent with the LTMS program have access to and benefit from significant the interagency coordination by both the resource and the regulatory agencies, saving considerable time, effort and money for the agencies and the project sponsors.

Program Review. The Management Plan called for periodic review and/or modification to ensure that the program remains achievable and relevant in light of changing conditions. The LTMS agencies review the disposal volumes annually and the basic program components every three years, and conduct a thorough analysis of the program every six years with input from interested parties. In 2012, the LTMS agencies completed the transition period as well as the comprehensive 12-year review of the program. The review process involved collecting, analyzing, disseminating and presenting data about the program's performance. The review process also included a series of public meetings (each focused on a different key topic suggested by stakeholders) and completing a final report with the review findings. The overall outcome of the review process forms the basis for continuing discussion regarding potential changes to the program's implementation. The Draft Final Report was issued in April 2013 and public comments were received at a stakeholder meeting and through written correspondence. Based on the comments received, the Draft Final Report will be revised and a Final Report is expected to be issued in August 2013.

Key Findings. The LTMS program review focused on how well the Management Plan has been implemented to date. In the Draft Final Report, several key findings were identified, including management measures and changes to the Bay system and regulatory environment. A variety of metrics, both quantitative and qualitative, were used to determine these findings, including applicable metrics described in the Management Plan, interim objectives of the transition period, additional measures that have been applied to help meet the LTMS goals, and consideration of the adaptability of the program to changing conditions. The most significant findings include: (1) changed conditions; (2) whether the LTMS agencies have achieved the reduction in in-Bay disposal and the corresponding beneficial reuse of dredged sediment; and (3) maintaining safe navigation in the Bay.

Changes to the System. Acknowledging that the San Francisco Bay physical processes are fundamentally changed by increased sea levels and a reduced sediment supply from the Delta; and understanding that dredging and placement does not increase the amount of sediment already in the system, the LTMS agencies considered whether a change to the program was

needed to address these issues. The agencies concluded that, given the benefits, the need for additional marsh habitat, and the need for sediment along shorelines and within marshes to keep up with rising sea levels, the goal of maximizing beneficial reuse of dredged sediment is appropriate and even more important now and into the future than it was in the early days of the LTMS program. Additionally, allowing disposal of large volumes of clean sediment in the ocean is less desirable now because this practice results in the loss of sediment from the Bay system. The agencies and stakeholders have also encountered a number of changed regulatory conditions since the Management Plan was written. To varying degrees, the program has been able to successfully address or adapt to many of these changes over time, while others are in process today. In this regard, the Management Plan's objective of creating a program capable of adapting to changes and remaining relevant has been met. The LTMS agencies recognize that continued adaptation will be necessary in the future.

Reduced In-Bay Disposal and Increased Beneficial Reuse. At the time of implementation, the agencies and stakeholders agreed that a transition period was necessary to allow funding acquisition, adjustments to budget, and the development of beneficial reuse sites capable of using dredged sediments. Therefore, a twelve-year transition period was instituted that reduced in-Bay disposal target volume limits every three years, ending in 2012, with the final in-Bay disposal volume of 1.25 mcy annually. This transition period was voluntary as long as in-Bay goals were met. If the transition target volumes were not met, regulatory allocations would be triggered. We are pleased to report that for each three-year period, the final in-Bay disposal target volumes were met through the end of 2012, and allocations were not triggered. Going forward, however, maintaining the in-Bay disposal target volume of 1.25 could be challenging due to budget issues facing many of the dredging project sponsors and fewer than desired placement sites.

Significant progress toward achieving the long-term LTMS objective of maximizing beneficial reuse has occurred. The dredged sediment volume beneficially reused during the first 12 years totaled approximately 21 mcy, or 44 percent of the total volume dredged. Most of the reused sediment came from USACE channel deepening projects, as opposed to maintenance dredging projects, and most of the reused sediment was placed at a few large restoration sites: HWRP, Montezuma Wetland Restoration Project (MWRP), and Middle Harbor Enhancement Area (MHEA). Although the HWRP and MHEA are completed and no longer accepting additional dredged sediment, the MWRP remains open, and several smaller reuse sites are available or in the process of becoming available. Overall, substantial capacity for beneficial reuse still existed at the close of the transition period, but some reuse sites are located at some distance from the majority of the dredging activity or require the dredging project to bring offloading equipment to the site, which remain a challenge in providing economical reuse options.

Navigation. Maintaining safe navigation in the Bay Area is a priority for all the LTMS agencies and stakeholders. As a result, necessary channels and other navigation facilities in the Bay area have generally been maintained. However, full depth has not been consistently achieved in all channels or facilities for numerous reasons, many of which are unrelated to LTMS goals and placement site objectives. For example, the funding from the Congress to maintain the federal channels have remained flat while dredging and disposal costs have increased overtime. In addition, the federal standard often limits the use of available funds for beneficial reuse of the sediment even if they are available. Throughout program implementation, navigational priority has been considered in every regulatory decision as part of the disposal site alternatives analysis. To date, dredging in a manner that comports with the LTMS objectives has been conducted in an "economically sound" manner, in that it has been achieved in aggregate by individual projects for which beneficial reuse or ocean disposal have been practicable and feasible.

Current LTMS Program. With the completion of the twelve year transition period and the program review, the LTMS agencies have found that the program has been successfully implemented to date, and propose to continue the program as designed. This means that approximately 80% of dredged sediment should be targeted to beneficial reuse or out of Bay disposal with only 20% targeted to in-Bay disposal at the four in-Bay dispersive disposal sites. However, given the reduction of sediment supplied to the system from the Delta, and rising sea levels, the agencies are now emphasizing that disposal at SFDODS should be minimized in favor of beneficial reuse as much as possible. This further reinforces the need to have beneficial reuse sites permitted and available.

In this regard, the MWRP is open and has significant capacity, and Cullinan Ranch is also available, although offloading equipment is needed. A number of other smaller reuse opportunities also exist around the Bay area. The wetlands restoration community in particular has become increasingly interested in the availability of dredged sediment to raise elevations at their sites, and the LTMS agencies are working to help coordinate their needs with appropriate dredging projects. In the medium term, the South Bay Salt Ponds have capacity of upwards of 25 mcy of sediment, but how dredged sediment would be transported and placed is still being determined. In the longer term, Skaggs Island is in the design phases of a project that could reuse approximately 70 mcy of sediment. Bel Marin Keys Expansion of the HWRP has been delayed due to cost sharing issues and the expense of pumping sediment onto the site. All of these sites need broad support to assist in moving them forward. The benefits to the communities surrounded by these projects go beyond habitat establishment to reduced coastal hazards from storms and flooding due to the extra protection marshes provide to shoreline communities.

Challenges Going Forward. Currently and in the foreseeable future, beneficial reuse sites will be available for dredged sediment because the Bay Area is home to many subsided or diked historic baylands that are planned for restoration. The challenge is how to reduce the cost of using these sites. Factors that increase costs include offloading equipment and the additional staff needed to place the sediment on the sites, site water management, and longer transit time to locations that are not centrally located. Additional funding sources can remedy some of these issues, but the public funds that have historically supported these types of projects have become scarce. In the past, federal and state government provided funds when requested by a coalition of government, industry and environmental representatives supporting the efforts to beneficially reuse sediment. Building this coalition again could potentially bring additional funding to bear.

Beyond direct placement of sediment onto subsided sites, which is the most certain and efficient way of raising elevations quickly, both the dredging community and the restoration community has raised the question of whether sediment could be placed in the Bay at strategic locations that would allow natural processes to move the sediment onto marshes or mudflats, and be considered beneficial reuse of the sediment. This is a valid question to ask, and the LTMS agencies have begun limited modeling efforts to investigate this question. Additional questions to consider include: How much sediment would have to be moved by the tides to a targeted marsh or beach in order to consider it beneficial use? How close to the site would the sediment need to be placed and by what means? What would the water quality impacts include? What would the impacts to benthic community and fishery resources include? Even if successful, how much of the annual dredging volume would these method account for? Would this method result in significant financial savings and have the desired outcome? Further thought and discussion about these concept and questions is underway.

While the LTMS program faces challenges and a changing system in the future, the program has remained relevant and viable. Staff continues to work closely with the stakeholder community to meet the LTMS goals in a flexible but consistent manner to benefit the Bay region.

The LTMS documents described in this report can be found on BCDC's website in the Special Programs Section, Dredging and Sediment Management at: http://www.bcdc.ca.gov/dredging/dredging_sediment.shtml.